

Potteric Carr NR survey of breeding birds occupying Huxter Well Marsh and Rossington Carr Fields Year 4 – 2007

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Introduction

Yorkshire Wildlife Trust (YWT) became the owners of 75ha of agricultural land, extending its Potteric Carr Nature Reserve to 205ha (*circa* 500 acres) in April 2004. This extension (study plot) comprises all of the former Huxter Well Fields which, for the purposes of this study, we have referred to as Huxter Well Marsh, and the area known as Rossington Carr Fields (see Bird *et al* (2004) for location map). The plot forms a triangle of land bordered by the Mother Drain flood bank to the north, the M18 motorway embankment to the south, and the South Yorkshire Railway line embankment to the west. The area is being developed into a large and intricate reedbed system, with subsidiary lagoons, wader scrapes and grazing marsh. This project is primarily designed to attract nesting Great Bitterns *Botaurus stellaris*, a species with just 51 'booming' males in the UK in 2007 (source: RSPB Conservation Science Department). Breeding Bitterns would qualify the site for Special Protection Area (SPA) status under the European Birds Directive, following on from the extension land's forthcoming accreditation by Natural England as a Site of Special Scientific Interest (SSSI).

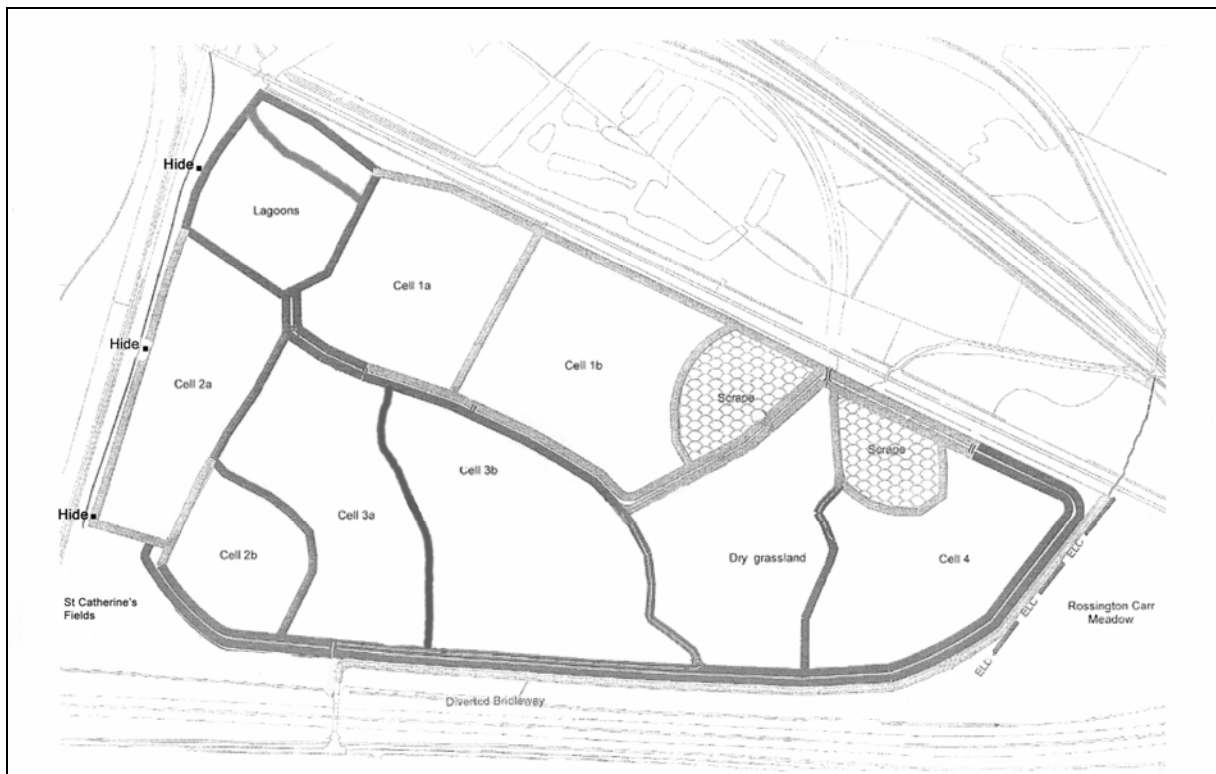


Figure 1. Diagram of the study plot showing the wetland cells, lagoons, wader scrapes and grasslands.

To scrutinize delivery of the wetland scheme's objectives, two requirements of the extension land development specified by WWF on behalf of HSBC (one of the main funding organisations) was to monitor water quality, and the effects of land-use changes on habitats and wildlife. To achieve the latter, Roger Mitchell, the Project Manager for the wetland development, requested

that breeding bird surveys be carried out before and during the wetland creation, concluding with a final survey conducted when habitats were fully established and supported by a YWT management plan. The first survey, before earthworks began, was carried out in spring 2004 and had its results published (Bird, Carroll and Scott 2004). Status of the breeding bird communities were again surveyed in both 2005 and 2006 (the results of which were published on the Potteric Carr website) and again in 2007, resulting in this paper. All four papers should be read to understand what has happened so far. A final survey is planned for 2010, whereupon the overall results with conclusions from the study (including, as yet, unpublished data) will be published in print.

Study methods

In 2007, fieldwork was carried out between 1st April and 10th July, with further observations made on second attempt nesting to 31st August. The same study techniques were used as in the earlier surveys (Bird, Carroll and Scott 2004). The landscape of the study plot changed in Rossington Carr Fields in 2007 due to ongoing earthworks. Each compartment was identified as either a wetland cell or a field, and given an individual number/letter or name (Figure 1). Since perimeter embankments were to remain unchanged (and in some cases not owned by the YWT), they did not form part of this study.

Description of habitats within the study plot

Descriptions of sub-habitats and their transitional stages were given in the first three papers. Civil engineering work continued from the previous year on the Reserve extension land, but resulted in no additional habitat types.



Figure 2. Part of 'St. Catherine's Fields' and 'Keyhole Drain' on 25th April 2007, looking SE from St. Catherine's Hide at the south end of Hawthorn Bank.

The weather, disturbance and predation in 2007

Following a dry spring a very wet period began in mid-June with torrential rain causing local flooding before the month end. In July, there was more rain, resulting in the wettest summer

recorded in England, and there was little sunshine. The small rise in extension land water levels may have caused some waterbird nests to become flooded and the wet weather was considered damaging to ground nesting birds.

Wetland creation earthworks continued on most working days during the survey period, but mainly on Rossington Carr Fields. Rossington Carr Meadow was scarified in March and drilled with conservation seed mixtures in early April. Sluices were positioned along the extension land ring main, which was itself being completed. The route of the diverted public bridleway was laid with recycled graded stone and rolled flat, though the actual public right of way remained along its original path during the survey period; the new route was operational from 26th September. There was heavy mechanical planting of reed rhizomes in the first half of May and re-profiling work on Rossington Carr wader scrape and cell 4 during May.

It is not known to what extent the construction disturbance had on nesting birds but it was one of several factors resulting in poor breeding success by some species; probable other factors responsible for the low survival rate in young being increased predation and the exceptionally wet summer weather. To reduce disturbance by development works during the breeding season there was regular liaison between the project management and surveying teams.

Predation by corvids was considered greater than in previous years. Again a pair of Carrion Crows nested at the edge of the study plot and there were always adults foraging on the extension land. A pre-roost gathering of corvids also took place on some evenings and numbered 24 on 22nd April. A Carrion Crow killed an adult Lapwing on Huxter Well Marsh on 3rd July and took a young Coot on 21st June. Magpies were also nesting in the area. A Kestrel took a Lapwing chick on Huxter Well Marsh on 10th May and on Rossington Carr Fields on 21st June, whilst a Peregrine took a small wader on 10th May. Coot eggs and young chicks were also the victim of further predation, and other predated eggs found were Pheasant, Moorhen and Grey Partridge. A Lesser Black-backed Gull predated a Black-headed Gull chick.

Results of the study

The 2007 survey results are presented under species headings in the form of a systematic list, with accounts given for each breeding species. Birds of Conservation Concern (BCC) in the red and amber lists are indicated. The British Ornithologists' Union *The British List: A Checklist of Birds of Britain* (7th Edition, 2006) nomenclature has been used with full English names engaged when placed with the scientific name. However, elsewhere in the text traditional bird names have been used.

MUTE SWAN *Cygnus olor* BCC amber list

One pair arrived by 20th April and was sitting a nest which was later abandoned. The pair moved to another part of Huxter Well Marsh, eventually producing six cygnets on 12th June, and the family was still present in autumn. A new breeding species for the study plot. There was a high count of 24 birds on 16th May.

LITTLE GREBE *Tachybaptus ruficollis*

Five pairs occupied Huxter Well and one pair Rossington Carr Fields. Two of them produced first attempt young with broods of three on 13th May and one on 26th June and there were seven second/third attempt broods of three and four on 2nd August, two on 7th August, six on 12th August and two, two and three around 31st August. Only one young from the early attempts was known to have survived to become full grown (on 19th June). More grebes occupied the study plot in 2007, indicating a satisfactory food supply.

GREAT CRESTED GREBE *Podiceps cristatus*

A pair held territory on Rossington Carr Fields (the area east of the bridleway's original route) cell 4 and were sitting a clutch of eggs in June and producing three young, though only one remained on 25th July. On Huxter Well Marsh a pair displayed on 3rd–4th April but seemingly

transferred to become the pair nesting on Rossington Carr Fields. However, a second pair nested on Huxter Well Marsh and carried one newly hatched young on a parent's back on 18th August.

GREYLAG GOOSE *Anser anser*

Present from April, with the highest count 20 adults on 17th. Six pairs bred producing 23 young, much increased on the 2006 figure. The meadows were used as crèche sites for the young. Twenty-seven on Rossington Carr Meadow on 21st May included 13 goslings, all from Huxter Well.

GREATER CANADA GOOSE *Branta canadensis*

Present from April and sitting on 8th, and the highest count 24 adults on 25th. Five pairs bred producing 23 young. All but one pair were on Huxter Well Marsh where a pair with two eggs on the Lagoon abandoned the nest due to disturbance. Thirteen grazed on Rossington Carr Fields on 21st May including young of Huxter Well provenance.

COMMON SHELDUCK *Tadorna tadorna* BCC amber list

One pair bred and produced four young on 3rd June and the family remained on Huxter Well Marsh to 24th July, by which time one adult and young had departed. Other shelducks were present at times and there was a high count of 16 on 25th May but no additional breeding pairs were identified.

GADWALL *Anas strepera* BCC amber list

From early April up to ten pairs were apparently using the study plot, however, there was no indication of breeding except on 27th May when a female appeared with a brood of six young on Huxter Well Marsh. A post-breeding gathering of males built up to 30 by 29th May and remained through June.

MALLARD *Anas platyrhynchos*

Ten pairs occupied the study plot and were considered to be breeding but only four broods of young were seen, totalling 25 ducklings. The first young appeared on Huxter Well Marsh on 6th April (11 young). Other broods numbered four (29th April), six (29th May) and another four (19th June). No young were seen on Rossington Carr Fields.

TUFTED DUCK *Aythya fuligula*

At least five pairs occupied the study plot and nesting was proved by four of them with broods of eight young appearing on 24th July, five on 26th July, six on 6th August and a further six on 7th August.

COMMON POCHARD *Aythya ferina* BCC amber list

This species became an addition to the breeding species list with a pair on Huxter Well Marsh which produced five young on cell 2b on 9th June. This is a scarce breeding duck in the UK.

GREY PARTRIDGE *Perdix perdix* BCC red list

Two pairs occupied the extension land, a reduction of one pair since the previous year. Two broken eggshells on 18th May indicated predation.

COMMON PHEASANT *Phasianus colchicus*

Five pairs bred in the study plot. Predation was evident with a total of 12 predated eggs found.

EURASIAN SPARROWHAWK *Accipiter nisus*

A pair held a partial territory within the study plot, occasionally hunting over the wetland.

MOORHEN *Gallinula chloropus*

Six pairs bred and produced 22 young, including second broods. One predated egg was found on 3rd June.

COOT *Fulica atra*

An increase to 12 pairs from two pairs in 2006. Fifteen nests produced 33 young. One predated egg was found. Four small young on 21st June predated by 28th. The highest count was 50 on 16th June. An adult predated the nest of a Black-headed Gull on three occasions; 12th, 16th and 26th June. One predated egg was found on 29th May.

EURASIAN OYSTERCATCHER *Haematopus ostralegus* BCC amber list

A pair was sitting by 15th April and produced two young on 12th May. One young still remained with the adults on 19th June but the other had disappeared. The highest count was five adults and two young on 15th May and it was possible that a second pair attempted nesting.

LITTLE RINGED PLOVER *Charadrius dubius* Schedule 1 of the Wildlife & Countryside Act 1981

The number of pairs increased to a significant five this year, but could only produce four young. One bird was on Huxter Well Marsh on 1st April and built up to three by the 3rd, with display taking place. Eventually four pairs constantly tried to establish nesting sites, with scraping and mating on a regular basis, but were disturbed by Lapwings and Black-headed Gulls or possibly distant machinery. One sitting on Huxter Well Marsh had its nest accidentally destroyed on 9th June. A second attempt nearby was washed out by heavy rainfall in June. One pair with two young was on the raised area in Rossington Carr Fields, but both young were thought to have perished. Two juveniles on 5th August had evidently been raised on site.

RINGED PLOVER *Charadrius hiaticula* BCC amber list

Six pairs in 2007 was double the previous year's figure, and productivity was good with 15 young also doubling the 2006 figure. Rossington Carr Fields was the most successful breeding ground this year, where at least three of the young were known to have become full grown.

COMMON REDSHANK *Tringa totanus* BCC amber list

Four pairs bred and produced ten young. This is an increase on last year's single pair. The two pairs on Rossington Carr Fields had a brood of three young and the second pair sat eggs. Meanwhile the two pairs on Huxter Well Marsh produced broods of three and four young. At least one young was seen when fully grown.

NORTHERN LAPWING *Vanellus vanellus* BCC amber list

Up to 19 pairs attempted nesting on the extension land (almost equal numbers on both sides of the public bridleway). This appears to be an increase on the figure originally breeding on the land when in agricultural usage. Although many more young hatched in 2007 (39) compared to 2004 (one), it appears as though the young soon disappeared and probably suffered from heavy predation. One well grown young was however recorded.

BLACK-HEADED GULL *Larus ridibundus* BCC amber list

A large colony became established on Huxter Well Marsh starting with 60 pairs which eventually increased to circa 200 pairs. Large numbers of young were produced. Just one pair attempted to nest on Rossington Carr Fields but ended in failure. A Lesser Black-backed Gull predated a Black-headed Gull chick on 30th July.

COMMON TERN *Sterna hirundo*

One pair unsuccessfully attempted to nest on Huxter Well Marsh. The pair arrived on 24th April and subsequently made several attempts to establish a nest site on an island in cell 3 island but sitting did not take place probably due to machines operating nearby at the time. Up to four birds occasionally visited the extension land in June and July.

COMMON WOOD PIGEON *Columba palumbus*
One pair bred in the vicinity of 'St. Catherine's Fields'.

STOCK PIGEON *Columba oenas* BCC amber list
Two pairs visited the study plot during the breeding season though there was no evidence of nesting taking place there.

SKY LARK *Alauda arvensis* BCC red list
Five territories were established by singing Sky Larks, with two of them on Huxter Well and three in Rossington Carr Fields.

PIED WAGTAIL *Motacilla alba*
A pair, thought to have nested outside the study area occasionally visited the study plot and appeared with young in late summer.

WINTER WREN *Troglodytes troglodytes*
Two territories were held on the extension land.

HEDGE ACCENTOR *Prunella modularis* BCC amber list
Two territories were held, both on Rossington Carr Fields.

EUROPEAN ROBIN *Erithacus rubecula*
Two territories were held, one on Rossington Carr Fields and the other in 'St. Catherine's Fields' where two young were reared.

MISTLE THRUSH *Turdus viscivorus* BCC amber list
A pair bred in 'St. Catherine's Fields' resulting in two young being produced.

COMMON WHITETHROAT *Sylvia communis*
A pair held territory on Rossington Carr Meadow.

BLUE TIT *Cyanistes caeruleus*
Two pairs bred, with a pair around St. Catherine's Fields' and a pair that nested in a hole in a dead hedgerow tree and produced young along the bridle path.

BLACK-BILLED MAGPIE *Pica pica*
Again, one pair nested in the public bridleway hedgerow but no young were produced.

CARRION CROW *Corvus corone*
The study plot boundary held a nest on the M18 motorway embankment (outside the survey area).

CHAFFINCH *Fringilla coelebs*
A territory was held in 'St. Catherine's Fields'.

REED BUNTING *Emberiza schoeniclus* BCC red list
A single territory was held in Rossington Carr Fields.

SPECIES	2006	2007	CHANGE 2006-7 (pairs)	CHANGE 2004-7 (pairs)
Little Grebe	2 pairs (4 nests; 9 young)	6 pairs (7 second/third-attempts; 26 young)	+4	+6
Great Crested Grebe	absent	2 pairs (nest; 4 young)	+2	+2
Mute Swan	absent	1 pair (nest; 6 young)	+1	+1
Greylag Goose	2 pairs (4 young)	6 pairs (23 young)	+4	+6
Canada Goose	3 pairs (18 young)	5 pairs (23 young)	+2	+5
Shelduck	1 pair (display; 4 young)	1 pair (4 young)	=	+1
Gadwall	1 pair (6 young)	1-4 pairs (brood of 6 young)	+0-3	+1-4
Mallard	2 pairs (19 young)	10 pairs (4 broods, 25 young)	+8	+10
Pochard	absent	1 pair (5 young)	+1	+1
Tufted Duck	3 pairs (13 young)	5 pairs (25 young)	+2	+5
Grey Partridge	3 pairs (registrations; 2 young)	2 pairs (registrations; predated eggs)	-1	-3
Pheasant	5 pairs (registrations; eggs; 5 young)	5 pairs (registrations; 12 predated eggs)	=	=
Sparrowhawk	part of 1 territory (registrations)	part of 1 territory (registrations)	=	=
Kestrel	1 pair (part of territory)	a possible part territory	=	=
Moorhen	4 pairs (registrations; nest; 9 young)	6 pairs (nests; predated egg; 22 young)	+2	+6
Coot	2 pairs (2 nests; 2 young)	12 pairs (15 nests; 33 young)	+10	+12
Oystercatcher	1 pair (registrations; 2 clutches; 2 young)	1-2 pairs (registrations; nest; 2 young)	+0-1	+1-2
Little Ringed Plover	3 pairs (registrations; 5 clutches; 4 broods; 10 young)	5 pairs (registrations; nests; 4 young)	+2	+5
Ringed Plover	3 pairs (registrations; 2 clutches; 7 young)	6 pairs (registrations; nests; 15 young)	+3	+5
Redshank	1 pair (registrations; 3 young)	4 pairs (registrations; nests; 10 young)	+3	+4
Lapwing	12 pairs (registrations; nests; 24 young HWM inc. second attempts)	19 pairs (registrations; nests; 39 young HWM/RCF inc. second attempts)	+7	+8
Black-headed Gull	6 pairs (6 nests; 9 young)	c.200 pairs (nests; many young)	+c.194	+c.200
Common Tern	1 pair (nest; 3 young)	1 pair (attempted to nest)	=	=
Wood Pigeon	1 pair (registrations)	1 pair (registrations)	=	=
Sky Lark	5-6 pairs (registrations)	5 territories (registrations)	-0-1	-11
Meadow Pipit	absent	absent	=	-1
Yellow Wagtail	absent	absent	=	-4
Wren	2 territories (registrations)	2 territories (registrations)	=	=
Hedge Accentor	2 territories (registrations)	2 territories (registrations)	=	+1

SPECIES	2006	2007	CHANGE 2006–7 (pairs)	CHANGE 2004–7 (pairs)
Robin	3 territories (registrations)	2 territories (registrations; 2 young)	-1	=
Mistle Thrush	1 possible pair	1 pair plus part territory (registrations; 2 young)	+1	+1
Common Whitethroat	2 part territories (registrations)	1 territory plus 1 part territory (registrations)	=	-4
Garden Warbler	absent	absent	=	-1
Blackcap	1 territory (registrations)	absent	-1	-1
Chiffchaff	1 territory (registrations)	one part territory (registrations)	=	=
Long-tailed Tit	absent	absent	=	-1
Blue Tit	1 pair (registrations)	2 pairs (registrations; young)	+1	=
Great Tit	1 pair (registrations)	absent	-1	-1
Magpie	1 pair (nest)	1 pair (nest)	=	=
Chaffinch	2 territories (registrations)	1 territory (registrations)	-1	-2
Yellowhammer	1 territory (registrations)	absent	-1	-4
Reed Bunting	1 territory (registrations)	1 territory (registrations)	=	=

Table 1. Summary of breeding birds inhabiting Potteric Carr nature reserve's 75ha extension land in 2006 and 2007.

Explanation of selected breeding status terms used in Table 1: Absent – absent as a breeding bird (though may have been recorded); Registration – at least three records (registrations) from the same locality over a requisite period of time. Evidence of what stage nesting had reached towards successful breeding is stated where known. Reserve extension land = study plot = formerly, Huxter Well Fields & Rossington Carr Fields.

Some other birds recorded during the survey

In addition to species listed in Table 1 others were logged during the survey period and most are listed below:

Whooper Swan *Cygnus cygnus* (11 on 7th April), Eurasian Teal *Anas crecca* (a pair was present on several dates), Northern Shoveler *Anas clypeata* (A pair frequented Huxter Well Marsh but there was no sign of breeding), Red-crested Pochard *Netta rufina* (five adult males spent most of 25th May on Huxter Well Marsh), Red-legged Partridge *Alectoris rufa* (a pair was recorded on three dates, but no evidence of breeding), Black-necked Grebe *Podiceps nigricollis* (an adult appeared with a well-grown young on cell 1b on 10th July, the young then remained to 22nd), Great Cormorant *Phalacrocorax carbo* (up to three), Grey Heron *Ardea cinerea* (up to eight), Osprey *Pandion haliaetus* (one over on 22nd April), Common Buzzard (occasionally flew over the study plot), Hobby *Falco subbuteo*, Merlin *Falco columbarius* (a second-year was hunting the area from 22nd April for several days), Peregrine Falcon *Falco peregrinus* (three records), Pied Avocet *Recurvirostra avosetta* (A pair arrived and were scraping a nest on 15th–16th May and mating occurred then disappeared until 22nd–24th May when the same behaviour was observed), European Golden Plover *Pluvialis apricaria* (70 *altifrons* race birds on 20th April was the only record during the study period), Red Knot *Calidris canutus*, Sanderling *Calidris alba*, Dunlin *Calidris alpina*, Ruff *Philomachus pugnax*, Common Snipe *Gallinago gallinago*, Black-tailed Godwit *Limosa limosa*, Bar-tailed Godwit *Limosa lapponica*, Whimbrel *Numenius phaeopus*, Eurasian Curlew *Numenius arquata*, Common Greenshank *Tringa nebularia*, Green

Sandpiper *Tringa ochropus*, Common Sandpiper *Actitis hypoleucos*, Ruddy Turnstone *Arenaria interpres*, Mediterranean Gull *Larus melanocephalus* (a pair of second-year birds made a superficial nesting attempt on 6th–8th May when mating and nest material was carried), Little Gull *Larus minutus*, Mew Gull *Larus canus*, Lesser Black-backed Gull *Larus fuscus*, Herring Gull *Larus argentatus*, Yellow-legged Gull *Larus michahellis*, Black-legged Kittiwake *Rissa tridactyla*, Sandwich Tern *Sterna sandvicensis*, Arctic Tern *Sterna hirundo*, Little Tern *Sternula albifrons*, Common Swift *Apus apus*, Common Kingfisher *Alcedo atthis*, Sand Martin *Riparia riparia*, Barn Swallow *Hirundo rustica*, House Martin *Delichon urbicum* (collected mud), Meadow Pipit *Anthus pratensis*, Northern Wheatear *Oenanthe oenanthe*, Song Thrush *Turdus philomelos*, Lesser Whitethroat *Sylvia curruca*, Eurasian Jackdaw *Corvus monedula*, Carrion Crow *Corvus corone*, European Goldfinch *Carduelis carduelis*, Common Linnet *Carduelis cannabina* and Yellowhammer *Emberiza citrinella* (one on 26th June). Records of Ruddy Duck *Oxyura jamaicensis* have been withheld from this paper.

Summary and conclusions

New breeding species in 2007 were Mute Swan and Pochard (both amber listed BCC) with single pairs of each, and two pairs of Great Crested Grebes. Other waterbirds again benefited from increased wetland areas; Coot and Moorhen for example were present in greater numbers. Reedbeds in the marshes were developing in the margins and drawdown zones on most cells but there was insufficient reed cover to entice any of the swamp warblers to hold territory in 2007. Intriguingly, both Avocet and Mediterranean Gull pairs both made superficial attempts to nest on Huxter Well Marsh, presumably involving birds that had not reached breeding maturity.



Figure 3. Looking NW across a desolate Rossington Carr Field on 25th April 2007 after recent landscaping.

The declining population trend due to habitat loss amongst Grey Partridge (-3 pairs since 2004), Sky Lark (-11 pairs) and Yellowhammer (-4 pairs) was expected, leaving these species either absent or with only a tenuous hold in the study plot. However, there was an unexpected increase (+8 pairs) in Lapwings compared to the number using the former agricultural land, and many more young were hatched in 2007, although survival rates were disappointing. Further gains were made in the number of other wading birds holding territory on the wetland, with four pairs of Redshanks (increasing from one pair in 2006), six pairs of Ringed Plovers (from three

pairs) and two additional pairs of Little Ringed Plovers, whilst a pair of Oystercatchers were successful in raising young for the second year running. The increase to five pairs of Schedule 1-listed Little Ringed Plovers is significant.

There was a significant increase in the size of the Black-headed Gull colony on Huxter Well Marsh islands, rising from six pairs in 2006 to at least 200 pairs in 2007. This is an amber listed BCC species that is consolidating its stronghold at Potteric Carr reserve.

The wet summer weather undoubtedly contributed to poor breeding success for some species and the increase in corvid activity on the extension land was a problem to ground nesting birds. The few remaining isolated oak trees in the marsh are unfortunately giving certain predatory species, notably Sparrowhawks and crows, a vantage point to see prey much more easily. Sheldon, Chaney and Tyler (2007) found a correlation in Lapwing nest failure and distance from predator perches, the chances of success being significantly reduced the closer to such a perch. It is for this reason that we recommended predator perch trees are removed.

The 2007 study team

Susan M. Bird, Roger W. Bird and Trevor Feltham made up the 2007 survey team.

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The main sponsors of the Potteric Carr Nature Reserve Development Scheme, of which the creation of a new wetland on the extension land is a part, and have enabled a nationally significant wildlife conservation project to come to Doncaster, are:

Main Funders

WWF/HSBC

RSPB/EU LIFE Programme

Natural England /Aggregate Levy Sustainability Fund (ALSF)

Heritage Lottery Fund

Supporting Funders

Environment Agency

Yorkshire Forward

Doncaster MBC /Single Regeneration Budget (SRB 6)

WREN (Waste Recycling Environmental)

SITA Trust

Network Rail

EWS (English Welsh & Scottish Railways)

BLF (Big Lottery Fund)

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